2/16/10

SURFACE WATER MONITORING RESULTS

DATE: December 9, 2009 **NPDES PERMIT #** ID-002832-1

TO: US EPA Region 10, IDEQ, NMFS, USFWS

FROM: Formation Capital Corp., U.S.

SUBJECT: Spring Quarter 2009, Semi-Annual Surface Water Monitoring

---

In accordance with the permit requirements of the National Pollutant Discharge Elimination System (NPDES) Permit No. ID-002832-1, samples were collected in the spring quarter 2009 at Formation Capital Corporation's (Formation) Idaho Cobalt Project (ICP). No discharge has occurred at Outfall 001, because the outfall has not been constructed.

SURFACE WATER REVIEW

Water Quality

Water quality grab samples were collected from three surface water sampling sites required for NPDES semi-annual reporting in May 2009. Figure 1 presents the locations of the surface water monitoring points. As required by the permit, results of all surface water monitoring at WQ-24a, WQ-28, and WQ-30 as part of routine monitoring are summarized in Table 1. Laboratory analytical reports are available on request.

WQ-24a

WQ-24 was relocated downstream out of concern for completeness of mixing in Big Deer Creek. The relocated sampling location is designated as WQ-24a.

Concentrations of several parameters were reported above their respective maximum MDLs as specified in the permit during spring sampling. These parameters are total recoverable aluminum, dissolved copper, total recoverable iron, and total suspended solids.

WQ-28

Concentrations of several parameters were reported above their respective maximum MDLs as specified in the permit. These parameters are total recoverable aluminum, total recoverable cobalt, dissolved copper, total recoverable iron, and total suspended solids. The field conductivity and laboratory conductivity measurements had relative percent differences greater than twenty percent.

Flow was not recorded for this sampling site because the water was flowing too high and the situation was too dangerous to have personnel collect flow measurements.

WQ-30

WQ-30 was added to the monitoring plan to provide data downstream of NPDES Outfall 001, this location meets the requirements described in Section I.D.1.(b) of the permit. Data from this location and WQ-24a, which is upstream of the outfall, will document any potential changes in water quality from the NPDES discharge.

Concentrations of several parameters were reported above their respective maximum MDLs as specified in the permit. These parameters are total recoverable aluminum, dissolved copper, total recoverable iron, and total suspended solids.

TABLE

Table 1 Field and Analytical Results

Analyte	MDL[1]	Laboratory Method	Laboratory MDL[2]	Sampling Location		
				WQ-24a 5/18/2009	WQ-28 5/20/2009	WQ-30 5/18/2009
Flow, field (gpm)		--		51615		55206
Arsenic, dissolved	2	EPA 200.7/200.8	6 / 0.02	<10	<10	<10
Cadmium, dissolved	0.1	EPA 200.7/200.8	0.8 / 0.004	<0.1	<0.1	<0.1
Cobalt, total recoverable	2	EPA 200.7/200.8	5 / 0.04	<6	8	<6
Copper, dissolved	1	EPA 200.7/200.8	0.9 / 0.03	4	9	5
Lead, dissolved	0.1	EPA 200.7/200.8	10 / 0.003	<1	<1	<1
Mercury, total recoverable	0.0002	EPA 245.7	0.0009	<0.2	<0.2	<0.2
Nickel, dissolved	5	EPA 200.7/200.8	2 / 0.05	<1	<1	<1
Selenium, total recoverable	2	EPA 200.7/200.8	3 / 0.09	<1	<1	<1
Silver, dissolved	0.2	EPA 200.7/200.8	2 / 0.009	<0.1	<0.1	<0.1
Thallium, total recoverable	0.3	EPA 200.7/200.8	50 / 0.02	<5	<5	<5
Zinc, dissolved	10	EPA 200.7/200.8	2 / 0.1	<5	<5	<5
Ammonia-N	1	EPA 350.1	0.02	<50	<50	<50
NO3+NO2 As N			3	<50	<50	<50
Sulfate (mg/L)	20	EPA 300.0	0.01	2	1	2
Total Suspended Solids (mg/L)	5	APHA 2540D	1	32	53	34
pH - field (Std. Units)				7.57	7.41	7.49
Dissolved Oxygen, Field (mg/L)				10.27	10.66	10.36
Temperature (Degrees Celsius)				7.24	6.73	6.39
Iron, total recoverable	30	EPA 200.7/200.8	8 / 2	840	1600	850
Aluminum, total recoverable	20	EPA 200.7/200.8	40 / 2	1.1	1.6	1.2
Hardness (mg/L)				18	15	18
Chloride (mg/L)	1	EPA 300.0	0.02	<0.5	<0.5	<0.5
Conductivity, field (mS/m)				4.1	3.2	4.1
Total Dissolved Solids (mg/L)				44	33	46
Other Monitored Parameters						
Acidity, T (mg/L)				<4	<4	<4
Silver, total recoverable				<0.1	<0.1	<0.1
Aluminum, dissolved				170	140	160
Alkalinity, T (mg/L)				20	37	18
Arsenic, total recoverable				<10	<10	<10
Calcium, dissolved				5910	4740	5920
Cadmium, total recoverable				<0.1	<0.1	<0.1
Cobalt, dissolved				<6	<6	<6
Copper, total recoverable				15	54	16
Conductivity (mS/m)				4.9	4	5
Fluoride				800	710	810
Iron, dissolved				90	100	80
Mercury, dissolved				<0.2	<0.2	<0.2
Potassium, dissolved				<1000	<1000	<1000
Magnesium, dissolved				800	600	800
Manganese, dissolved				6	9	7
Manganese, total recoverable				20	36	23
Sodium, dissolved				2000	2000	2000
Nickel, total recoverable				1	2	<1
Lead, total recoverable				<1	1	<1
pH (Std. Units)				6.9	7.09	6.94
Selenium, dissolved				<1	<1	<1
Turbidity - field (NTU)				11.6	16.8	9.79
Zinc, total recoverable				7	8	8

all units are ug/L unless otherwise noted

[1] Maximum Method Detection Limit as specified in the permit

[2] Maximum Method Detection Limit for Energy Laboratory may change yearly with certification.

FIGURE

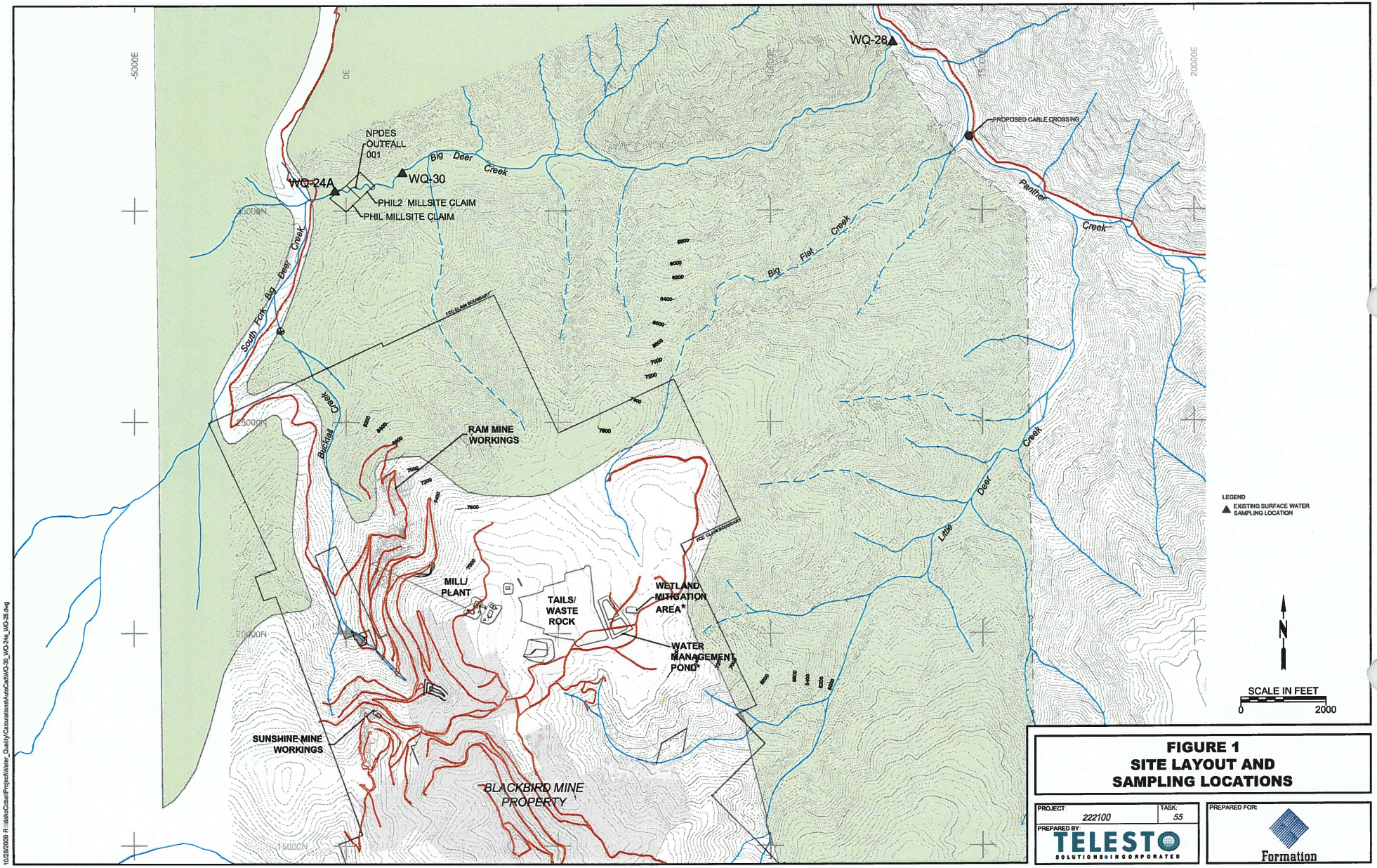

FIGURE 1
SITE LAYOUT AND SAMPLING LOCATIONS

PROJECT	TASK
222100	55

PREPARED BY: TELESTO SOLUTIONS INCORPORATED

PREPARED FOR: Formation

10/28/2009 R:\Idaho Cobalt Project\Water_Quality\Calculations\AutoCad\WQ-30_WQ-24a_WQ-28.dwg